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**Amendments to the Specification:**

Please replace paragraph [00186] with the following amended paragraph:

**[00186]** FIG. ~~[[26]]~~ 27 illustrates a schematic diagram of a nanofluidic transistor 130 formed on a semiconducting nanotube 132, such as formed from GaN. The nanotube is shown filled with an ionic solution 134 and coupled on both ends to fluidic reservoirs. Within fluidic reservoirs 140, 142 are a source electrode 136 and drain electrode 138, respectively. In another embodiment, the source and drain electrodes are in the reservoirs and contact the ends of the nanotube, and in another embodiment the source and drain contacts are attached directed to the exterior of the nanotubes near each end which facilitates current flow through the semiconducting wall of the nanotube.